1-1956

Performance Trials of . . . Field Crop Varieties

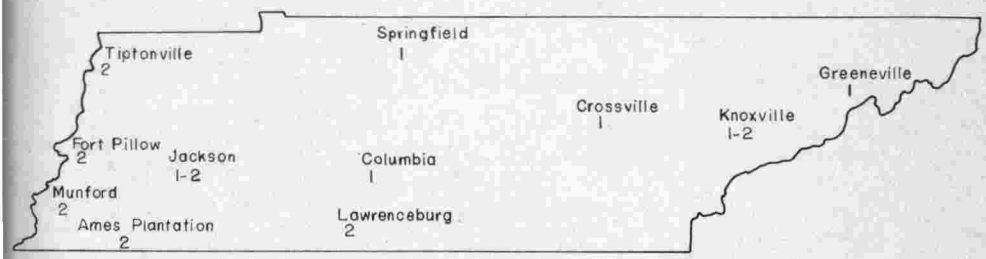
University of Tennessee Agricultural Experiment Station

Performance Trials of ...

FIELD CROP VARIETIES

COTTON
CORN
OATS
WHEAT
BARLEY
SOYBEANS
ALFALFA

Data for 1955 with Summaries of Results from Previous Years



1. Tests at Experiment Stations.

2. Location of Cotton Tests.

THE UNIVERSITY OF TENNESSEE
AGRICULTURAL EXPERIMENT STATION
KNOXVILLE

RECOMMENDED CROP VARIETIES

Corn Hybrids

White—Tenn. 29,† Dixie 33, Dixie 17, Tenn. 10, Funk G-779W U. S. 523W, Pfister (P.A.G.) 631, Pfister (P.A.G.) 636.

Yellow—Tenn. 90, Dixie 22, Funk G711, Keystone 222.

Corn, open-pollinated

White—Neal Paymaster, Jellicorse.

Cotton

Early—Tenn. 241, Empire, W. R.*, Cobal, Fox.

Late—Plains*, Auburn 56*, Coker 100-W* Deltapine 15, Stoneville 2-B, Delfos 9169.

Oats

Fall-Seeded—Forkedeer, Leconte, Victorgrain 48-93, Arkwin.

Spring-Seeded—Mo-0-205, Andrew, Columbia.

Wheat—Seneca, Thorne, Fulcaster, Vigo.

Barley—Jackson #1, Kenbar, Watauga.

Alfalfa—Williamsburg, Narragansett, Atlantic, Buffalo.

Soybeans—Ogden, Dorman, Lee.

Red Clover—Kenland

Rye—Balbo

Characteristics of Recommended Varieties

Corn Hybrids

White—Full Season:

Tenn. 29—A high yielding prolific with medium ear height and a strong stalk which stands up better than Dixie 33. It has a pure white kernel on white cob. Because of its wide adaptation, the name of Tenn. 29 is being changed to Dixie 29.

Dixie 33—A high yielding prolific. The grain has a trace of copper-coloring.

†Because of its wide adaptation, the name of Tenn. 29 is being changed to Dixie 29.
*Recommended where fusarium wilt is prevalent.

Dixie 17—A prolific that yields well but does not stand up as well as Dixie 33. It has a light red cob and a trace of copper-coloring in the grain.

Tenn. 10—A small-eared prolific with a slender cob allowing the grain to dry out rapidly. It lodges badly but is still grown widely in the state.

Funk G-779W—A white-cobbed semi-prolific that yields well. It has only a fair husk cover.

White—Medium Season:

U.S. 523W—A corn with medium ear height. Some stalks produce two ears.

Pfister (P.A.G.) 631—A corn with ears of medium height. Some stalks produce two ears.

Pfister (P.A.G.) 636—A semi-prolific corn with ears of medium height.

Yellow—Full Season:

Tenn. 90—A tall corn with single ears placed high on the stalk and having good husk cover and grain quality.

Dixie 22—A semi-prolific hybrid having good grain quality and producing both red and white cobs.

Funk G-711—A semi-prolific hybrid which has some tendency to lodge and has only fair husk cover.

Keystone 222—A semi-prolific hybrid being recommended for the first time. Grain quality is only fair as it has a tendency to dry out slowly.

Although short season hybrids are not generally recommended if one desires an early maturing hybrid, the following have been the best of those tested: Funk G-512W, Stull 400W, Funk G-134 and Funk G-704. All have inadequate husk protection with resulting damage from birds, insects and diseases.

Neal Paymaster and Jellicorse, open-pollinated varieties, have been included in the tests as standards of comparison with the hybrids. The stage has been reached where several hybrids are in production which are far superior and their recommendation after 1956 may not be justified.

Cotton

Early: There is little difference in staple length or turnout among the early varieties.

Tenn. 241—A variety with bolls somewhat smaller than Empire.

Empire W. R.—A fusarium wilt-resistant variety with large bolls.

Cobal—An early determinate type with bolls somewhat smaller than Empire that are easy to pick.

Fox—A very early determinate type, prolific variety with small bolls.

Late:

Plains—A fusarium wilt-resistant variety having bolls of of medium size.

Auburn 56—A fusarium wilt-resistant variety having bolls medium size.

Coker 100W—A fusarium wilt-resistant variety having bolls of medium size.

Deltapine 15*—This variety has a high turn-out, small bolls, small leaves and is later than Plains, Auburn 56 or Coker 100W.

Stoneville 2-B*—A variety with bolls of medium size and matures along with Deltapine 15.

Delfos 9169*—A variety having bolls of medium size.

Oats

Fall Seeded:

Forkedeer—A winter-hardy variety with yellow grain. Has tendency to lodge under conditions of high fertility.

Leconte—A stiff-strawed, winter-hardy oat. Stands better than Forkedeer.

Victorgrain—48-93—A semi-hardy type of high yielding ability if mild winter conditions exist. Should be planted early in Fall.

Arkwin—A semi-hardy, medium early, tall variety. Under mild winter conditions yields along with Forkedeer and Leconte.

Spring Seeded:

Mo-0-205—A stiff-strawed variety of high yielding ability. Grain is brown and has a high test weight.

*Of questionable adaptability in Middle and East Tennessee.

Andrew—A variety having yellow grain. Its height and standing ability are similar to that of Mo-0-205.

Columbia—An oat with white grain. It is susceptible to leaf rust and lodges more than does Mo-0-205.

Wheat

Seneca—A beardless, red-chaffed, stiff-strawed variety of medium height. It is a sister selection to Thorne, but has a higher test weight and a slight yield advantage over Thorne.

Thorne—Indistinguishable from Seneca in the field (See Seneca).

Fulcaster 612—A tall, bearded variety which has been grown in Tennessee for many years.

Vigo—A beardless, white-chaffed variety, of late maturity. It is adapted to soils of high fertility.

Barley

Jackson No. 1—A winter-hardy, high yielding, smooth-awned barley with long drooping heads. Susceptible to scald.

Watauga—A variety that rates fair for winter hardiness and standing ability, medium in maturity and height and is smooth-awned. A good variety for winter grazing.

Kenbar—A winter-hardy variety of medium height. It is early maturing and fairly smooth-awned.

Alfalfa

Williamsburg—A high yielding variety with good winter-hardiness.

Atlantic—A variegated variety, adapted in areas where bacterial wilt is not a problem. Outyields Buffalo.

Narragansett—A fine-stemmed variety having a high percentage of leaves and appears to be longer-lived than other varieties when wilt is not a problem.

Buffalo—A selection from Kansas Common that is resistant to bacterial wilt.

Soybeans:

Ogden—A high yielding variety of mid-season maturity (October 15) with purple blossoms and olive-colored beans.

Dorman—A large yellow-seeded variety which matures about October 1 and has approximately the same oil content as Ogden.

Lee—A yellow-seeded variety which matures a few days later than Ogden and shatters somewhat less than Ogden.

COTTON, CORN, OAT, WHEAT, BARLEY, ALFALFA and SOYBEAN VARIETIES

Performance Trials

Data for 1955 with summaries of results from previous years

Robert H. Gibson, *Assistant Agronomist*

INTRODUCTION

The purpose of the project, Varietal Trials of Farm Crops, is to measure the performance of field crop varieties grown by farmers of this and neighboring states, and of the best experimental varieties which are being developed by experiment stations and other agencies.

The tests were conducted using field plot designs, fertility levels and experimental techniques that have been found suitable for each crop.

Committees composed of specialists from the research, resident teaching and extension staffs study the performance data on the crops and develop recommendations as to adapted varieties.

In order for a variety to be recommended it must yield well and have other characteristics that are suitable for Tennessee conditions.

PRESENTATION OF DATA

The tests were conducted in each of the principal agricultural regions of the state where the specific crop is being grown. Plots of each variety were replicated several times at each location. An average of the performances of a variety across the area of adaptation and over a period of years is the best basis for making a prediction as to how it will perform for the farmer.

The following tables have been prepared with the entries being listed in order of performance, the highest-yielding entry being listed first.

The least significant difference (l.s.d.) at the 5% level for the 1955 test is shown at the bottom of each table. If the yields of any two varieties differ by this amount the higher can be expected to outyield the lower 95% of the time.

CORN

The high yields in the 1955 corn tests reflect the generally good corn season in Tennessee. Exceptions were at Columbia and Greeneville where summer drouths reduced the yields. The excellent yields at Springfield indicate a near-perfect season there. Fertilizer was supplied at a rate to support yields at the 80 to 100-bushel level. The number of plants per acre ranged from 8,300 to 10,000 at different locations, but was consistent at each location.

Seeds of commercially available hybrids were chosen from seed being sold to farmers in Tennessee. By so doing it is hoped that the seed planted are representative of the hybrid. The Dixie 33 planted in 1955 did not perform in the same way it had in other good corn-production seasons. It is believed, therefore, that the sample used did not truly represent the bulk of the seed planted by the farmer.

In addition to the characteristics previously reported, ear height and moisture per cent of the grain at time of harvest have been included. Varieties with a "low" ear-height had ears in 1955 averaging 4.0 feet or less above ground; "medium" 4.5 feet and "high"—5.0 feet or higher. Varieties which have uniformly low ear-height are generally preferred for mechanical picking. The per cent moisture at harvest gives an additional measure of relative maturity.

Data are presented in Tables 1, 2 and 3. Yields are based on shelled corn, corrected to 15.5% moisture.

Table 1 — *Corn: Yields in* 1955 *of* 34 *Varieties at Each Of Seven Locations*

Average of 6 Replications at Each Location Yields in Bushels Per Acre

Color	Variety	Greene-ville	Knox-ville	Cross-ville	Spring-field	Colum-bia	Jack-son	Fort Pillow
Commercially Available								
W	Tenn. 29	59.0	75.2	80.9	121.6	52.7	97.1	84.8
W	Dixie 17	48.5	81.3	86.7	125.8	39.8	94.5	77.0
W	Dixie 33	45.3	68.8	78.4	107.0	45.8	81.7	80.6
Y	Funk G-711	54.7	78.9	87.2	126.0	52.7	96.5	76.0
W	Funk G-779W	45.6	89.7	82.2	123.1	49.2	90.5	86.4
W	Pfister (P.A.G.) 636	42.8	79.1	94.1	112.7	38.6	89.0	70.5
W	U. S. 523W	47.3	73.8	74.3	104.7	49.6	94.4	80.0
W	Tenn. 10	37.7	74.1	79.2	113.0	45.2	89.0	76.4
Y	Keystone 222	48.2	73.4	75.2	119.8	42.5	97.8	70.0
Y	Dixie 22	48.3	78.3	88.0	122.1	34.5	95.4	73.3
Y	Tenn. 90	41.7	71.7	81.1	107.6	43.2	90.8	76.5
W	Pfister (P.A.G.) 631	46.9	72.4	76.5	103.8	40.7	79.7	72.6
Y	Funk G-704	44.5	77.4	80.7	99.0	42.1	89.5	75.2
Y	Funk G-134	45.4	75.7	81.9	89.4	43.3	84.1	78.9
W	Stull 400W	42.4	75.2	82.7	97.5	41.3	85.7	77.4
W	Funk G-512W	41.2	70.1	77.1	93.3	38.2	78.3	70.7
Y	U. S. 13	43.5	71.7	73.6	88.3	45.7	77.2	70.5
W	Jellicorse	30.7	67.0	69.8	113.4	24.9	82.1	66.7
W	Neal Paymaster	33.9	70.3	72.4	110.3	30.6	82.9	64.8
W	Keystone 107W	45.7	89.5	85.4	112.1	48.9	93.1	66.8
Y	Pioneer 309A	51.2	72.7	83.4	98.3	50.1	84.7	72.7
Y	Stull 100Y	43.2	67.8	77.2	81.8	51.4	78.8	74.1
Y	Pfister (P.A.G.) 488	33.3	76.2	79.6	99.3	40.7	86.5	65.7
Y	Funk G-710	44.0	78.2	90.1	117.5	46.6	90.8	79.1
W	Asgrow 101W	39.5	70.7	60.1	92.9	47.9	87.5	65.8
Experimental								
W	T.4102	56.3	84.7	89.0	133.5	53.9	97.9	89.1
W	T.3741	51.9	80.8	82.8	109.1	51.5	90.5	76.3
W	T.4103	60.4	81.9	83.7	137.6	41.5	*	89.1
W	T.4133	51.3	75.1	90.8	115.6	46.1	98.8	85.2
W	T.4132	50.0	73.4	88.1	111.9	57.1	96.6	76.5
Y	T.4413	49.6	78.5	84.7	104.0	54.9	97.0	83.8
W	T.4131	46.9	81.1	91.2	118.8	53.5	82.7	75.3
W	T.3742	56.1	77.7	84.9	105.5	43.7	96.6	75.2
Y	T.4412	41.4	77.8	80.6	108.0	42.4	89.8	75.2
	Average	45.7	76.0	81.0	109.0	44.2	89.2	75.7
	L.S.D. (.05)	9.9	14.3	11.1	9.5	13.4	8.3	11.0

*T.4103 was not included in the Jackson Test.

Table 2 — *Corn: Average Yield and Other Characteristics in* 1955 *of 34 Corn Varieties Tested at 7 Locations*

6 Replications at Each Location

Color	Variety	1955 Ave. Bu./A	% Erect Plants	Ears 100 Plants	Grain Quality	Husk Cover	Ear Height	Grain % Moisture At Harvest	Growing Season
	Commercial								
Y	Funk G-711	81.7	85	138	Good	Fair	High	21.8	Full
W	Tenn. 29	81.6	94	156	Good—	Good	Medium	20.9	Full
W	Funk G-779W	81.0	92	146	Good—	Fair	High	20.6	Full
W	Dixie 17	79.1	83	165	Good	Good	High	18.3	Full
Y	Funk G-710	78.1	94	150	Good—	Fair	High	21.6	Full
W	Keystone 107W	77.4	94	117	Good	Fair	Medium	21.0	Full
Y	Dixie 22	77.2	92	140	Good	Fair	High	21.6	Full
W	Pfister (P.A.G.) 636	75.3	91	138	Fair +	Good	Medium	19.2	Medium
Y	Keystone 222	75.3	87	127	Good—	Good	High	21.5	Full
W	U.S. 523W	74.9	93	119	Good	Fair	Medium	18.5	Medium
W	Tenn. 10	73.5	81	171	Fair+	Good	High	19.0	Full
Y	Pioneer 309A	73.3	98	114	Good—	Fair	Medium	19.6	Full
Y	Tenn. 90	73.2	92	113	Fair+	Good	High	20.5	Full
Y	Funk G-704	72.7	94	113	Fair	Fair	Low	17.8	Medium
W	Dixie 33*	72.5	88	146	Fair	Good	High	20.7	Full
W	Stull 400W	71.8	94	104	Good	Fair	Medium	16.6	Short
Y	Funk G-134	71.3	98	101	Good—	Fair	Medium	17.5	Short
W	Pfister (P.A.G.) 631	70.4	94	115	Good	Fair	Medium	18.3	Medium
W	Pfister (P.A.G.) 488	68.8	92	111	Good	Fair	High	18.5	Medium
Y	Stull 100Y	67.8	94	98	Fair+	Poor	Low	16.7	Short
W	U. S. 13	67.2	93	104	Poor	Poor	Low	16.8	Short
W	Funk G-512W	67.0	93	112	Fair	Fair	Medium	17.2	Short
W	Neal Paymaster	66.5	80	138	Fair	Good	High	19.4	Full
W	Asgrow 101W	66.4	82	131	Good	Good	High	20.2	Full
W	Jellicorse	65.0	87	157	Fair	Good	Medium	20.2	Full
	Experimental								
W	T.4102	85.0	86	151	Good—	Good	Medium	22.4	Full
W	T.4103	82.4	93	157	Good—	Good	High	21.0	Full
W	T.4133	79.8	92	136	Good—	Good	High	19.6	Full
W	T.4132	79.1	93	129	Good	Good	High	20.8	Full
Y	T.4413	79.0	97	115	Fair+	Good	Medium	20.8	Full
W	T.4131	78.5	94	126	Good	Good	High	21.6	Full
W	T.3741	77.6	95	125	Fair	Fair	Low	18.0	Medium
W	T.3742	77.1	94	161	Good	Fair	Low	17.4	Medium
Y	T.4412	73.6	96	105	Good—	Fair	Medium	22.2	Full
	Average	74.7							
	L.S.D. (.05)	3.6							

*Not representative of variety.

Table 3 — *Corn: Average Yield and Other Characteristics Of Corn Varieties Tested for 2 or 3 Years*

Color	Variety	3 Yr. Ave. (53-55) Bu./A	2 Yr. Ave. (54-55) Bu./A	% Erect Plants at Harvest	Ears 100 Plants	Grain Quality	Husk Cover	Growing Season
	Commercial							
W	Tenn. 29	62.7	59.8	96	146	Good	Good	Full
W	Dixie 17	60.1	58.4	85	153	Good	Good	Full
W	Dixie 33*	59.8	54.4	93	141	Good	Good	Full
Y	Funk G-711	58.9	58.0	85	122	Good	Fair	Full
W	Funk G-779W	58.8	57.8	94	134	Good	Fair	Full
W	Pfister (P.A.G.) 636	57.9	53.8	93	135	Good	Good	Medium
W	U. S. 523W	57.7	54.6	92	111	Good	Good	Medium
W	Tenn. 10	57.3	53.6	86	155	Good	Good	Full
Y	Dixie 22	57.2	55.2	93	132	Good	Good	Full
Y	Keystone 222	57.0	53.8	87	124	Fair	Good	Full
Y	Tenn. 90	56.7	52.6	93	108	Good	Good	Full
W	Pfister (P.A.G.) 631	56.5	53.4	92	112	Good	Fair	Medium
Y	Funk G-704	56.5	52.2	95	103	Fair	Fair	Medium
Y	Funk G-134	55.9	52.1	97	97	Fair	Fair	Short
W	Stull 400W	55.7	51.1	95	101	Fair	Fair	Short
W	Funk G-512W	54.1	49.6	95	105	Fair	Fair	Short
W	U. S. 13	54.1	51.1	95	102	Poor	Poor	Short
W	Jellicorse	50.0	46.8	89	141	Good	Good	Full
W	Neal Paymaster	48.4	46.6	86	133	Good	Good	Full
W	Keystone 107W		52.4	94	103	Good	Fair	Full
Y	Pioneer 309A		52.0	96	107	Fair	Fair	Full
Y	Stull 100Y		49.7	94	95	Poor	Poor	Short
W	Pfister (P.A.G.) 488		48.7	91	107	Good	Fair	Medium
	Experimental							
W	T.4102		61.1	86	151	Good	Good	Full
W	T.3741		57.9	95	125	Fair	Fair	Medium

*1955 Planting not representative of variety.

COTTON

The 1955 cotton variety tests were conducted with the cooperation of the U. S. Department of Agriculture.

The tests were conducted at seven locations (see map on cover). A test consisted of 4 to 8 replications of each variety.

Boll weevils severely injured the test at Ames Plantation.

Data are presented in tables 4, 5, 6 and 7.

Table 4 — *Cotton: Yields of Lint Per Acre of 20 Varieties Tested at 7 Locations in Tennessee,* 1955

Average of 8 replications at each location, except Tiptonville, 4.

	State Av. Lbs.	Tipton-ville Lbs.	Fort Pillow Lbs.	Munford Lbs.	Grand Jct. Lbs.	Jackson Lbs.	Lawrence-burg Lbs.	Knox-ville Lbs.
Commercially Available:								
Hale 33	833*	947	977	844	894	—	663	672
Fox	810	887	959	811	875	922	585	634
Bobshaw 1A	808	889	869	898	791	901	700	609
Plains	808	857	925	841	864	871	644	651
Cobal	797	838	896	805	865	896	649	632
Auburn 56	794	897	878	886	728	908	673	585
Empire W. R.	792	884	864	850	685	923	704	632
Coker 100W	785	800	865	796	775	931	668	660
Deltapine 15	785	934	940	788	698	922	613	601
Tenn. 818	770	802	843	821	713	866	645	703
Delfos 9169	758	844	859	832	715	925	577	555
Stoneville 2B	742	755	799	866	699	805	602	671
Tenn. 241	731	792	768	795	691	875	569	629
Experimentals:								
T-92	961	1046	1131	991	1018	1044	753	743
T-89	955	1070	1133	1018	1029	987	729	720
UTE 15	832	942	928	845	804	972	685	649
Tenn. 19	828	999	873	899	871	878	614	665
Empire Der.	806	878	894	881	792	913	652	634
UTE 8	776	876	884	789	824	858	571	632
Coker L. H. 51-24	750	851	832	818	694	864	595	593
L. S. D.		116	96	82	111	93	88	51

Table 5 — *Cotton: Classer's Staple Length (in 32nd. inches) of 20 Varieties Tested at 7 Locations in Tennessee,* 1955

	State Av.	Tipton-ville	Fort Pillow	Munford	Grand Jct.	Jackson	Lawrence-burg	Knox-ville
Commercially Available:								
Hale 33	32*	33	33	33	33	—	29	30
Fox	33	33	34	34	32	33	31	31
Bobshaw 1A	33	32	32	34	34	33	31	33
Plains	33	33	34	34	33	32	30	33
Cobal	34	34	34	34	34	33	33	34
Auburn 56	33	33	34	33	33	34	34	32
Empire W.R.	33	33	34	34	34	32	30	32
Coker 100-W	33	33	34	34	34	33	32	33
Deltapine 15	33	34	33	34	33	33	32	34
Tenn. 818	33	34	34	34	34	33	31	33
Delfos 9169	33	33	34	34	33	32	34	33
Stoneville 2-B	33	34	34	34	34	33	31	32
Tenn. 241	33	33	34	34	34	32	31	33
Experimentals:								
T-92	32	31	34	32	33	32	31	32
T-89	32	32	34	33	33	31	32	31
UTE 15	33	31	34	33	34	33	32	31
Tenn. 19	33	32	34	32	34	32	32	32
Empire Der.	33	33	34	33	34	33	31	31
UTE 8	33	33	34	34	34	33	32	32
Coker L. H. 51-24	33	34	33	34	34	34	31	32

*Hale 33 was tested at only 6 locations.

Table 6 — *Cotton: Lint Per Cent of 20 Varieties Tested at 7 Locations in Tennessee, 1955*

	State Av.	Tipton-ville	Fort Pillow	Munford	Grand Jct.	Jackson	Lawrence-burg	Knox-ville
Commercially Available:								
Hale 33	37.6*	35.5	36.7	37.6	37.6	—	40.6	39.3
Fox	35.5	35.1	35.6	35.0	35.1	34.6	35.3	37.9
Bobshaw 1A	36.5	34.6	35.8	36.7	38.7	34.9	36.9	37.9
Plains	36.4	34.2	36.6	36.4	36.6	36.1	37.2	37.5
Cobal	35.2	32.5	34.9	35.5	35.0	34.4	36.9	37.0
Auburn 56	34.8	33.6	34.7	35.2	34.9	34.8	35.0	35.3
Empire W. R.	35.8	32.3	34.9	34.7	35.3	36.5	38.4	38.7
Coker 100W	35.4	33.1	35.0	34.7	35.5	35.3	37.0	37.5
Deltapine 15	37.8	36.5	37.8	37.9	38.5	37.6	37.7	38.9
Tenn. 818	35.4	32.9	35.5	34.9	34.3	32.4	37.2	40.7
Delfos 9169	34.4	32.1	35.1	34.8	34.8	34.7	34.9	34.4
Stoneville 2B	35.0	33.1	34.4	35.1	35.0	34.4	34.6	38.8
Tenn. 241	34.9	32.9	33.5	33.9	35.1	34.9	36.5	37.7
Experimentals:								
T-92	39.0	37.7	38.2	38.1	39.7	38.3	40.2	41.1
T-89	39.3	38.2	39.0	38.5	40.0	38.8	40.4	40.3
UTE 15	36.8	34.3	36.5	35.9	37.2	36.9	38.1	38.8
Tenn. 19	36.1	33.8	35.8	36.9	36.2	34.7	36.6	38.8
Empire Der.	36.1	33.5	35.5	35.8	35.6	35.8	37.9	39.0
UTE 8	37.2	35.8	37.3	37.0	39.6	36.5	36.0	38.5
Coker L. H. 51-24	36.1	35.9	36.5	35.9	36.3	36.2	35.1	36.7

*Hale 33 was tested at only 6 locations.

Table 7 — *Cotton: Yield and Other Characteristics of 17 Varieties Tested for 2 or 3 Years Period*

	3 Yr. Av. lint lbs/A 1953-55	2 Yr. Av. lint lbs/A 1954-55	Percent Lint	Staple Length (32nd in.)	Bolls Per Pound	Percent Total Yield at 1st picking
Commercially Available:						
Plains	627	682	36.5	32	68	67
Cobal	624	662	36.1	33	66	75
Fox	624	659	35.6	33	80	75
Empire W. R.	623	666	36.7	33	60	68
Tenn. 818	615	649	36.3	33	67	72
Auburn 56	613	663	34.7	32	73	69
Tenn. 241	605	636	36.3	33	65	71
Coker 100W	597	649	35.8	33	72	70
Deltapine 15	587	635	38.4	33	76	67
Delfos 9169	585	643	35.1	33	68	66
Stoneville 2B	578	638	35.1	32	67	66
Bobshaw 1A*	—	663	36.3	32	72	66
Experimentals:						
T89	746	777	39.0	32	76	74
T92*	—	776	39.0	32	74	76
UTE 15*	—	718	38.0	32	62	70
Tenn. 19*	—	703	36.8	32	66	78
UTE 8*	—	666	37.5	32	66	70

*Tested only 2 years (1954-55) in state wide tests.

FALL-SEEDED SMALL GRAINS

Generally mild winters for the past three years have given semi-winter types a yield advantage over winter types.

The unseasonable freeze during the last week in March 1955 reduced the yields of all small grain. Barley was injured somewhat more severely than wheat which in turn was injured more than oats. The injury was in proportion to the stage of growth of the plants, the more advanced receiving the greater injury.

Fall-seeded small grain data are presented in Tables 8, 9, and 10.

Table 8 — *Fall Seeded Oats: Summary of Yield and General Characteristics of 13 Varieties Tested at 6 Locations*

Average of 4 Replications at Each Location Yields in Bushels Per Acre

Variety	State '53-55	State '54-55	State '55	Knoxville '55	Greeneville '55	Crossville '55	Springfield '55	Columbia '55	Jackson '55
Leconte	84.4	89.8	92.7	103.7	94.5	63.5	99.5	119.4	74.2
Forkedeer	83.7	77.0	84.1	68.2	96.7	93.7	73.3	108.0	63.5
Dubois	—	86.1	84.0	80.6	99.6	53.7	86.7	111.1	71.2
Victorgrain 48-93	97.8	96.4	81.6	94.3	76.2	42.1	78.9	101.4	96.0
Arkwin	84.7	86.7	74.7	87.3	94.6	52.5	82.0	130.9	80.5
Experimental:									
Tenn. 17-410-76	—	—	86.9	84.7	96.1	53.7	90.4	116.1	79.5
Tenn. 53-2	—	—	85.4	90.1	94.3	54.2	80.7	111.2	80.8
Tenn. 53-12	—	—	94.8	102.2	97.3	49.3	90.3	133.9	94.6
Tenn. 53-18	—	—	85.7	88.3	82.6	56.3	86.6	110.1	89.3
Tenn 53-24	—	—	93.3	87.9	96.4	51.6	91.2	133.7	97.8
Tenn. 53-34	—	—	94.7	93.1	91.2	69.7	84.2	123.9	105.1
Tenn. 53-39	—	—	81.5	82.2	92.0	49.0	80.0	111.6	73.2
090xBond 138-1-20	91.7	90.0	87.5	86.0	91.8	55.8	88.2	119.8	82.5
L.S.D. (.05)				10.6	N.S.	17.6	5.6	16.9	3.7

Variety	Winter Hardiness	Freeze Injury*	Standing Ability	Relative Maturity	Plant Height
Leconte	Good	2+	Good	Med. Late	Medium
Forkedeer	Good	3—	Fair	Med. Early	Med. Tall
Dubois	Good	3	Fair	Med. Late	Short
Victorgrain 48-93	Fair	3+	Good	Med. Late	Med. Tall
Arkwin	Fair	2+	Good	Med. Early	Tall
Experimental:					
Tenn. 17-410-76	Fair	3—	Fair	Med. Late	Medium
Tenn. 53-2	Fair	2+	Good	Med. Late	Med. Tall
Tenn. 53-12	Good	2+	Good	Med. Late	Short
Tenn. 53-18	Poor	3—	Fair	Med. Late	Med. Tall
Tenn. 53-24	Good	2	Good	Late	Tall
Tenn. 53-34	Fair	3—	Fair	Med. Early	Short
Tenn. 53-39	Poor	3+	Poor	Med. Early	Medium
090xBond 138-1-20	Good	3—	Fair	Med. Early	Medium

*Reaction to sub-freezing weather last week in March 1955. Smaller numbers indicate less injury.

Table 9 — *Wheat*: *Summary of Yields and General Characteristics of Varieties Tested at 6 Locations*

Average of 4 Replications at Each Location Yields in Bushels Per Acre

Variety	State '53-55	State '54-55	State '55	Knox-ville '55	Greene-ville '55	Cross-ville '55	Spring-field '55	Colum-bia '55	Jack-son '55
Seneca	45.2	44.4	38.5	56.1	17.0	36.6	47.5	52.7	20.4
Thorne	40.8	39.4	38.4	54.6	17.8	34.2	46.9	51.5	24.9
Vigo	38.7	37.4	34.9	46.6	16.4	32.8	44.5	39.3	29.6
Genessee	—	41.6	39.5	47.6	17.8	44.7	48.1	50.5	28.0
Knox	—	—	21.0	35.2	15.8	26.7	29.1	0.0*	18.7
Coker 47-27	—	34.9	17.4	43.2	14.9	23.3	18.1	0.0*	4.8
Tenn. 9 (Exp.)	—	36.9	33.3	49.5	18.1	34.3	39.7	30.3	27.3
Tenn. 11 (Exp.)	—	36.5	29.1	45.1	18.1	24.2	37.3	29.1	20.4
Okla. Hard Red	—	—	24.0	32.2	18.3	24.1	32.7	26.1	10.1
L.S.D. (.05)				4.5	N.S.	10.2	7.2	9.8	6.1

*Knox and Coker 47-27 winter-killed at this location.

Variety	Winter Hardiness	Freeze Injury**	Standing Ability	Relative Maturity	Plant Height	Awn or Beard Character
Seneca	Good	2	Good	Medium	Medium	Awnless
Thorne	Good	2	Good	Medium	Medium	Awnless
Vigo	Good	2	Fair	Late	Tall	Awnless
Genessee	Good	2	Good	Medium	Medium	Awnless
Knox	Fair	5	Fair	Early	Short	Awnless
Coker 47-27	Poor	5	Good	Early	Tall	Awnless
Tenn. 9 (Exp.)	Fair	3	Good	Medium	Tall	Awnless
Tenn. 11 (Exp.)	Good	3	Fair	Late	Medium	Awnless
Okla. Hard Red	Fair	4	Poor	Med. Early	Short	Awned

**Reaction to sub-freezing weather last week in March 1955. Smaller numbers indicate less injury.

Table 10 — *Barley*: *Summary of Yields and General Characteristics of 8 Varieties Tested at 6 Locations*

Average of 4 Replications at Each Location Yields in Bushels Per Acre

Variety	State '53-55	State '54-55	State '55	Knox-ville '55	Greene-ville '55	Cross-ville '55	Spring-field '55	Colum-bia '55	Jack-son '55
Jackson No. 1	45.4	43.7	33.6	48.9	23.6	41.1	48.9	28.1	10.3
Kenbar	—	52.8	41.2	54.3	35.7	29.2	57.1	34.3	35.9
Watauga	51.7	45.0	26.4	54.1	28.8	21.2	46.6	0.0*	7.6
Experimental:									
Hooded 5-112-38	—	52.8	48.5	75.0	26.8	43.6	77.2	36.3	31.3
Upright 50-106-11	56.0	49.4	42.1	58.2	33.2	42.0	55.5	42.9	20.5
Upright 236-3-46	—	55.9	42.3	53.5	31.7	48.9	55.4	37.6	26.1
Wong 22	—	—	41.0	55.9	27.5	51.3	58.3	33.2	19.6
Upright 97-10-1	—	—	40.5	54.7	29.3	45.7	53.0	42.2	17.8
L.S.D. (.05)				7.3	N.S.	3.8	6.7	13.3	13.4

*Watauga winter-killed at this location.

Variety	Winter Hardiness	Freeze Injury**	Standing Ability	Relative Maturity	Plant Height	Awn or Beard Character
Jackson No. 1	Good	3	Fair	Early	Medium	Smooth Awned
Kenbar	Good	3+	Fair	Early	Medium	Smooth Awned
Watauga	Fair	4	Fair	Medium	Medium	Smooth Awned
Experimental:						
Hooded 5-112-38	Good	2	Good	Med. Late	Medium	Hooded
Upright 50-106-11	Good	2+	Good	Med. Late	Tall	Smooth Awned
Upright 236-3-46	Good	3	Good	Med. Late	Medium	Smooth Awned
Wong 22	Good	3—	Good	Medium	Medium	Smooth Awned
Upright 97-10-1	Good	3—	Good	Medium—	Medium	Smooth Awned

**Reaction to sub-freezing weather last week in March 1955. Smaller numbers indicate less injury.

SPRING-SEEDED OATS

Spring-seeding of oats is not generally recommended for Tennessee. Fall-seedings give higher yields and compete more favorably with weeds than do spring-seedings. They also provide winter cover and may be grazed to advantage.

Data on spring seedings are presented in Table 11.

Table 11 — *Spring-Seeded Oats: Yield of 6 Varieties Tested at 4 Locations.*

4 Replications at Each Location Yields in Bushels Per Acre

Variety	State 2-Yr. Av. '54-'55	State Av. '55	Knoxville '55	Crossville '55	Columbia '55	Jackson '55
Forkedeer	45.9	49.8	64.6	10.0	56.3	68.4
Leconte	30.6	28.9*	45.6	0.0	—	41.2
Mo-0-205	67.9	66.2	46.2	61.4	67.1	90.2
Andrew	64.6	59.9	33.3	61.8	66.9	77.4
Columbia	—	46.6	34.8	33.8	55.3	62.5
Clinton 59	53.0	55.9	40.4	45.2	64.5	73.3
L.S.D. (.05)			10.3	16.0	5.8	11.3

*3 Locations only.

ALFALFA

The late March 1955 freeze injured the first cutting of all alfalfas tested. The ability of a variety to persist and produce high yields for a number of years is very important. Long time averages are therefore reported.

Data are presented in Table 12.

Table 12 — *Alfalfa: Summary of Yield at Six Locations For the Years Indicated*

Average of 4 Replications at Each Location Tons of Air-Dry Hay Per Acre
(Tests Seeded Fall 1952)

Variety	COLUMBIA 3-Yr. Ave. (1953-55)	COLUMBIA 1955	JACKSON 3-Yr. Ave. (1953-55)	JACKSON 1955	KNOXVILLE 3-Yr. Ave. (1953-55)	KNOXVILLE 1955	SPRINGFIELD 2-Yr. Ave. (1953-54)	4-Loc. Average	Freeze Injury*
Williamsburg	3.76	3.49	5.58	6.14	2.58	3.29	4.17	4.02	3
Okla. Approved	3.62	3.44	5.62	6.25	2.39	2.71	3.91	3.88	3
Du Puits	3.86	3.51	5.29	5.43	2.42	2.63	3.85	3.86	4
Kansas Common	3.63	3.56	5.68	6.02	2.22	2.65	3.90	3.86	3
Narragansett	3.63	3.58	5.12	5.94	2.46	2.67	3.94	3.79	1+
Atlantic	3.60	3.14	5.38	5.58	2.36	2.71	3.68	3.76	3
Buffalo	3.42	3.28	5.51	6.19	2.07	2.47	3.73	3.68	3
Calif. Common	2.13	0.81	4.93	4.66	1.40	stand lost	2.26	2.68	5
L.S.D. (.05)		1.67		2.86		1.65			

*Reaction to sub-freezing weather last week in March 1955 at Columbia and Knoxville. Smaller numbers indicate less injury.

Variety	CROSSVILLE (Seeded Fall '49) 6-Year Average (1950-55)	CROSSVILLE (Seeded Fall '49) 1955	Freeze Injury**	GREENEVILLE (Seeded Fall '50) 5-Year Average (1951-55)	GREENEVILLE (Seeded Fall '50) 1955	Freeze Injury**
Narragansett	3.38	2.57	1	2.97	3.87	1
Okla. Common	3.04	2.43	3	2.71	3.32	2
Kansas Common	2.92	2.38	3	2.79	3.26	2
Atlantic	2.93	1.90	3	—	—	—
Williamsburg	—	—	3	2.63	3.29	2
Argentine	2.65	1.88	5	—	—	—
New Mex. Common	2.56	1.94	5	—	—	—
Buffalo	2.41	1.84	3	2.53	2.93	2
Calif. Common	Winter-killed first yr.			2.19	2.12	5
L.S.D. (.05)		1.39			0.96	

**Reaction to sub-freezing weather last week in March 1955. Smaller numbers indicate less injury.

SOYBEANS

Varietal tests were conducted at 3 locations in 1955. Due to the erratic behavior of the varieties at Jackson, yield results are not included for this location.

Table 13 gives the performance of soybeans tested in 1955. See the list of recommended varieties appearing earlier in this publication for additional descriptions.

Table 13 — *Soybeans: Yields of 7 Varieties Tested in 1955 at 2 Locations.*

Average of 4 Replications

	Av. Yield Bu/A 1955	Knoxville Bu/A 1955	Columbia Bu/A 1955	Seed Quality	Range in Date of Maturity
Lee	31.0	34.2	27.7	Good	Oct. 15-Oct. 25
Ogden	28.2	31.6	24.7	Good	Oct. 15-Oct. 25
Volstate	26.7	33.7	19.7	Good	Oct. 25-Nov. 5
S-100	25.4	27.5	23.3	Good	Sept. 15-Sept. 25
Perry	23.3	23.3	23.3	Poor	Aug. 30-Sept. 10
Dorman	22.1	21.2	23.0	Good	Sept. 15-Sept. 25
Wabash	20.9	20.5	21.3	Fair	Aug. 30-Sept. 10
L.S.D. (.05)		5.9	3.1		

Project:

Varietal Trials of Farm Crops

Personnel:

L. N. Skold, Agronomist

C. D. Fisher, Assistant Agronomist (on leave)

Robert H. Gibson, Assistant Agronomist

Cooperators:

J. Hugh Felts, Superintendent, Tobacco Experiment Station, Greeneville.

J. N. Odom, Superintendent, Main Experiment Station, Knoxville.

John A. Odom, Superintendent, Plateau Experiment Station, Crossville.

E. J. Chapman, Superintendent, Middle Tennessee Experiment Station, Columbia.

Lawson M. Safley, Superintendent, Highland Rim Experiment Station, Springfield.

Ben P. Hazelwood, Superintendent, West Tennessee Experiment Station, Jackson.

Joseph R. Overton, Assistant Agronomist, West Tennessee Experiment Station, Jackson.

D. M. Simpson, Associate Agronomist, U. S. D. A. Cotton Field Station, Knoxville.

E. N. Duncan, Science Aid, U. S. D. A. Cotton Field Station, Knoxville.

Joe Barfield, Warden, Fort Pillow State Farm, Fort Pillow.

R. H. Scott, Manager, and James Bryan, Assistant Manager, Ames Plantation, Grand Junction.

Robert Wooten, Munford.

Dewberry Brothers, Lawrenceburg.

Gil Parker, Tiptonville.